

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 27 FEB 2006

WIPO

PCT

Applicant's or agent's file reference MDX,008-PCT	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2004/050037	International filing date (day/month/year) 09.12.2004	Priority date (day/month/year) 10.12.2003	
International Patent Classification (IPC) or national classification and IPC B21L3/00, B21L11/00, C22C5/08, A44C11/00, A44C27/00			
Applicant MIDDLESEX SILVER CO. LIMITED et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 20.05.2005		Date of completion of this report 23.02.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Ritter, F Telephone No. +49 89 2399-2387	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/050037

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-10 as originally filed

Claims, Numbers

8-26 as originally filed

1-7, 27, 28 received on 08.06.2005 with letter of 03.06.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded".

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/050037

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-28
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-28
Industrial applicability (IA)	Yes: Claims	1-28
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US-A-2 138 088

D2: EP-B-0 729 398

2. Independent claims 1 and 28:

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses a method of making silver chain which comprises forming lengths of silver wire into successive chain links whose ends abut, and closing the links by brazing abutting ends thereof (page 1, column 1, line 57 to column 2, line 5).

The subject-matter of claim 1 therefore differs from this known method in that:

the links are closed by brazing or welding by means of a laser, wherein the wire comprises at least 92.5 wt % Ag and 0.5 - 3 wt % Ge.

The problem to be solved by the present invention may therefore be regarded as joining the abutting ends of the links without having to apply an additional filler material.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

Document D2 discloses the joining of two elements made of a material comprising a silver content of at least 77% by weight and a germanium content of between 0.4% and 7% (claims 1 and 3). A preferred material has a silver content of at least 92.5 wt

% and a germanium content of 0.5 - 3 wt % (claim 2). D2 further clearly states that laser welding of these materials is advantageous (column 4, lines 26-34) and that in a corresponding joining method no additional filler material is needed (column 2, line 57-column 3, line 7).

Having knowledge of the teaching of D2 and looking for a way of manufacturing a silver chain according to the method known from D1 without the need of adding filler material, it would be obvious to the person skilled in the art to manufacture the chain from the preferred alloy of D2 and joining the abutting ends by laser welding, thereby arriving directly at a method according to claim 1. D2 furthermore gives a clear indication in column 1, line 41 and in claim 6 to the use of the alloy in the field of jewellery, which of course includes the making of chains.

The subject-matter of claim 1 does also not appear to be inventive in the light of document D2 and the prior art mentioned in the description of the application, page 2, paragraph 2. In this paragraph the applicant acknowledges that machines for making jewellery chain in gold or other precious metals, in which the links are closed on-line by laser welding, are known. Consequently a method of making chain which comprises forming lengths of wire into successive chain links whose ends abut, and closing the links by welding abutting ends thereof by means of a laser is known. So the subject-matter of claim 1 differs from this prior art only in that the chain is manufactured from a silver wire comprising at least 92.5 wt % Ag and 0.5 - 3 wt % Ge.

When looking for a silver alloy being especially adapted to be used in this known process, the person skilled in the art would consider the alloy disclosed in D2, which explicitly states that the alloy lends itself to joining by laser welding (column 4, lines 26-29) and to the use in manufacture of items of jewellery (claim 6).

The same reasoning applies, *mutatis mutandis*, to the subject-matter of the corresponding independent claim 28, which therefore is also considered not inventive.

3. Dependent claims 2 to 27:

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/GB2004/050037

Dependent claims 2 to 27 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step. All additional features are either known from the documents cited in the search report or represent normal workshop practice.

Re Item VIII

The subject-matter of claims 15 and 16 is unclear due to the term "about"

CLAIMS

1. A method of making silver chain which comprises forming lengths of silver wire into successive chain links whose ends abut, and closing the links by brazing or welding abutting ends thereof by means of a laser, wherein the wire comprises at least 92.5 wt % Ag and 0.5 - 3 wt % Ge.
2. The method of claim 1, wherein the wire is of diameter 0.008 – 0.20 cm (0.003-0.08 inches).
3. The method of claim 1, wherein the wire is of diameter 0.013-0.08 cm (0.005-0.030 inches).
4. The method of any preceding claim, wherein the composition of the wire in cross section is constant.
5. The method of claim 4, wherein the wire is of a ternary Ag-Cu-Ge alloy containing at least 92.5 wt% Ag, 0.5-3 wt% Ge, elemental boron as a grain refiner at a concentration of 1-40 ppm and the balance, apart from incidental ingredients and/or impurities, copper.
6. The method of claim 4, wherein the wire is of a ternary Ag-Cu-Ge alloy comprising, apart from incidental ingredients and impurities, not less than 92.5 wt% Ag, about 6.3 wt % Cu, about 1.2 wt % Ge, and about 4-8 ppm elemental B.
7. The method of claim 4, wherein the wire is of a ternary Ag-Cu-Ge alloy containing more than 93.5 wt% to 95.5 wt% Ag, from 0.5 to 3 wt% Ge, 1-40 ppm elemental boron and the remainder, apart from incidental ingredients and/or impurities, copper.

14

PCT / G B 0 4 / 5 0 0 3 7

27. The method of claim 25, wherein the atmosphere has a dew point in the range from +2°C to +50°C.
- 5 28. A silver chain which comprises lengths of silver wire formed into successive links whose ends abut and are closed by brazed or welded joints, wherein the wire comprises at least 92.5 wt% Ag and 0.5 - 3 wt % Ge.